infections in untreated patients = $31; moderate, AWIC = $287; and severe, AWIC = $4182. **CONCLUSION:** These data show IVIG prophylaxis cost $24,512 per patient year, compared to $4500 with no prophylaxis, or about a 445% increase in cost. The cost-effectiveness of IVIG in CLL has not been established, and availability of IVIG is limited. Further studies on other alternatives, such as prophylactic antibiotic therapy, and impact on quality of life are needed.

PCN21

SYSTEMATIC REVIEW OF COST-EFFECTIVENESS-ANALYSIS STUDIES OF TRASTUZUMAB (HERCEPTIN™) IN TREATMENT OF HER2-POSITIVE BREAST CANCER

Le QA
University of Southern California, Los Angeles, CA, USA

OBJECTIVE: There have been numerous studies on cost-effectiveness of trastuzumab in both treatments of adjuvant and metastatic breast cancer (BC). Nevertheless, the results reported were varied depending upon the assumptions and/or perspectives of the studies. We performed a systematic review of cost-effectiveness-analysis (CEA) studies of trastuzumab in treatment of HER2-postive breast cancer. **METHODS:** Literature search from 1996 to December 2007 on databases including PubMed, Ovid MEDLINE, and HealthSTAR was performed to retrieve CEA studies of trastuzumab, using MESH terms and keywords such as "trastuzumab," "costs and cost analysis," "economics," "breast neoplasm," "cost effectiveness," "cost utility," and "breast cancer." Additionally, abstracts on CEA studies were also obtained from American Society of Clinical Oncology (ASCO) and ISPOR annual meetings. Only CEA studies reported incremental cost-effectiveness ratio (ICER) or cost-utility ratio (ICUR) as cost per quality-adjusted life years were included in this review. **RESULTS:** Thirty five studies (20 published articles and 15 abstracts) were identified, of which 18 studies (14 adjuvant, 3 metastatic BC studies, and 1 study of product life-cycle of trastuzumab) representing societal health care perspectives from 12 countries were satisfied the criteria. The mean (median) ICERs of trastuzumab are $24,069/QALY ($23,766/QALY) [ranged from $4,767 to $58,414/QALY] and $88,373/QALY ($80,000/QALY) [ranged from $60,120 to $125,000/QALY] for HER2-postive adjuvant and metastatic breast cancer treatments, respectively. Majority of sensitivity analyses showed the main cost driver was the acquisition cost of trastuzumab. In addition, over the product life-cycle of trastuzumab, the overall ICER is $34,400/QALY (Garrison et al., 2006). **CONCLUSION:** This review suggests that the average costs per QALY of trastuzumab in both treatments of adjuvant and metastatic HER2-positive breast cancer are consistent and below the suggested cost effectiveness threshold of $100,000/QALY.

PCN22

IS CAPECITABINE A COST-EFFECTIVE ADJUVANT TREATMENT OF STAGE III COLON CANCER IN ONTARIO?

Orchard MC[1], Hoch J[1], Alibhai SMH[2]
[1]University of Toronto, Toronto, ON, Canada, [2]University Health Network, Toronto, ON, Canada

OBJECTIVE: To explore the cost-effectiveness of capecitabine as adjuvant treatment for Stage III colon cancer. Phase III clinical trials show that capecitabine improves disease-free survival. However, these trials involved younger patients than reflected clinically and overall survival was not significantly better than with usual care. We conducted a modeling study comparing the cost-effectiveness of capecitabine and standard care (Fluorouracil/Leucovorin (5FU/LV)) in a public-payer context (Canada), using an older cohort, and with overall survival as the main outcome. **METHODS:** A Markov model was developed to determine the cost-effectiveness of capecitabine compared with 5FU/LV. The base case was a 70-year-old man after total mesorectal resection excision of Stage III colon cancer. A five year time horizon was used. Health states included treatment phase, remission, recurrence, disease progression, and death; throughout the model (except during the active treatment states) patients could die from other risk-related causes. Ontario health economic data were used for costs. Probabilities were obtained from the published literature, and sensitivity analyses were conducted. **RESULTS:** The base case costs for capecitabine and 5FU/LV were $12,999 and $12,191, respectively. Overall survival was 4.132 and 4.069 years, respectively. The incremental cost-effectiveness ratio of capecitabine was $12,821 per life year gained. However, the incremental cost-effectiveness ratio of capecitabine was greater than $50,000/life year when the annual probability of relapse was greater than 0.96 or when drug costs were assumed to be greater than $1410 per cycle (both values within the plausible range). **CONCLUSION:** Capecitabine produced modestly improved survival over 5FU/LV (0.063 extra years) with a favourable cost-effectiveness ratio. However, because the model was sensitive to variations in relapse rate and drug costs, the relative attractiveness of capecitabine over 5FU/LV is not certain. In addition, utilities and indirect costs were not considered in the model. Because capecitabine is administered orally, this could be an important factor warranting further research.

PCN23

COST-EFFECTIVENESS ANALYSIS OF LAPATINIB PLUS CAPECITABINE VERSUS CAPECITABINE ALONE IN THE SECOND LINE TREATMENT FOR BREAST CANCER TREATMENT

Ejzykowicz F, Hay JW
University of Southern California, Los Angeles, CA, USA

OBJECTIVE: Compare two therapy regimens, Lapatinib plus Capecitabine to Capecitabine alone, for advanced or Metastatic HER2-positive breast cancer patients who were pretreated with regimens that included an anthracycline, a taxane, and trastuzumab. **METHODS:** A Markov model, written in Microsoft Excel(r), is used to simulate progression of breast cancer in a hypothetical cohort of breast cancer patients in a societal perspective. The model consists of three health states: Clinical Benefits (Response or Stable Disease), Progressive Disease, and Death. Transitions between health states were assumed to occur once a month. Life expectancy, costs and QALYs are discounted monthly by 0.0025% (3% annually). All costs are adjusted to 2007 dollars. **RESULTS:** Lapatinib plus Capecitabine increases discounted life expectancy and quality-adjusted life expectancy by 0.43 years and 0.54 years, respectively, when compared to Capecitabine alone. This result yields an incremental cost-effectiveness ratio (ICER) of USD$135,701.69 per QALY (upper 95% CI USD$230,864.99 per QALY), which may be cost effective, based on the threshold of USD$150,000/QALY. If the value of Lapatinib price increases at least 13.4%, the combination therapy is no longer cost-effective. The same outcome is observed if we increase the transition probability from the Clinical Benefits state to the Progressive Disease state in the combination therapy by 12.5% or if we decrease it by 19.3% in monotherapy. Additionally, by using the 5th percentile of the utility for Clinical Benefits and the 95th percentile of the utility for Progressive Disease, the ICER is US$D281,091.34/QALY and USD$201,232.58/QALY, respectively. **CONCLUSION:** Based on a threshold of USD$150,000/QALYs, the treatment with Lapatinib plus Capecitabine is cost-effective in the base case for